

TITLE OF THE INVENTION

PORTABLE GAMING DEVICE FOR VIEWING WAGERING RESULTS

BACKGROUND OF THE INVENTION

Field of the Invention:

[01] The present invention is directed to a method, device, and computer readable storage medium for generating wagering results and transmitting the results to a viewing system for later viewing.

Description of the Related Art:

[02] The Casino gaming industry generates billions of dollars in net revenues per year. Of course, wagering on games of chance is legal only in certain jurisdictions, and even in those jurisdictions a license must be obtained to offer wagering games in particular locations.

[03] It would be entertaining if a person could legally view a gambling game such as a slot machine for real money in a location other than a legalized gambling institution. Therefore, what is needed is a way in which a person can enjoy a wagering game and receive winnings based therein, while not having to be present in a casino environment.

SUMMARY OF THE INVENTION

[04] It is an aspect of the present invention to provide improvements and innovations in wagering games.

[05] The above aspects can be obtained by a method that includes (a) generating and storing results of a wagering game; (b) copying the stored results to a portable viewing device; and (c) viewing the stored results on the portable viewing device.

[06] These together with other aspects and advantages which will be subsequently apparent, reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

BRIEF DESCRIPTION OF THE DRAWINGS

[07] Further features and advantages of the present invention, as well as the structure and operation of various embodiments of the present invention, will become apparent and more readily appreciated from the following description of the preferred embodiments, taken in conjunction with the accompanying drawings of which:

[08] Figure 1 is a block diagram illustrating hardware used to implement the present invention, according to an embodiment of the present invention;

[09] Figure 2 is a flowchart illustrating a method of generating and viewing game results, according to an embodiment of the present invention;

[10] Figure 3 is an example of a portable viewer, according to an embodiment of the present invention;

[11] Figure 4 is a block diagram illustrating use of a PDA as a viewer, according to an embodiment of the present invention;

[12] Figure 5 is a block diagram illustrating how game results can be downloaded over a computer communications network, according to an embodiment of the present invention; and

[13] Figure 6 is a block diagram illustrating how game results and software can be stored on a storage medium, according to an embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[14] Reference will now be made in detail to the presently preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings, wherein like reference numerals refer to like elements throughout.

[15] The present invention relates to providing an ability of a person to play (technically just view) a slot machine (or other wagering game) conveniently from a portable device in any location, while still retaining the ability to legally win real money.

[16] This can be accomplished by having the person make a wager in a casino by buying a portable slot viewing device from the casino (or other licensed vendor), or receiving such a device by other mechanisms (such as in the mail). The purchase of the

portable slot viewing device should be considered as a legal wager. During the consummation of the sale, a casino clerk (or automated machine) generates random trials of a slot game and stores these random trials in a casino storage device or database. The random trials are also copied onto the portable slot viewing device (or other medium) which is given (or loaned) to the player. The portable slot viewing device now has a dollar value associated with it, depending on the random trials generated. The ultimately dollar value may (preferably, but not required) be initially hidden from the player to enhance his or her enjoyment and surprise.

[17] The player is then free to take the portable slot viewing device out of the casino and anywhere he or she wishes. The portable slot viewing device is merely a viewer, as the results of the slot games have already been determined in the casino (or other environment) and are pre-stored (both in the casino database and in the viewer). Thus, the player can press a button and watch slot reels spin, and the player can be ultimately awarded money as if it were a real slot machine. However, no random numbers are generated as this is an offline predetermined outcome. There should typically be no discretion involved in the player's actions, as everything is pre-stored. When the player has finished viewing all of the pre-stored game results, the device has a final cash value which can then be cashed in from the vendor. The final cash value can be verified by the vendor using the original database.

[18] As an analogy, a player can make a bet on a sporting event in a casino sports book. The player can then go elsewhere (even home) to watch the game. If the player wins, the player can then return to the casino to cash in his ticket (or request payment by mail). The only difference is in the present invention (unlike the sporting event), the

results are already determined and pre-stored. These results can be viewed in a user prompted and graphic fashion in order to provide enjoyment to the player as if the player were really playing a live slot machine. In fact, it will be transparent to the user that the results are pre-stored, as the game would appear identical to a live slot game in a casino.

[19] When the device is finished displaying all of the gaming results and the end result is a profit, then the player should return the device to the casino (or possibly mail it in, or transmit an electronic request) for reimbursement for the cash value. The casino will then check their database based on the device's unique ID (using a number or barcode) and determine the cash value of the device (actually the cash value of the set of results associated with the device), which should be the same as displayed on the device itself. The casino can then pay the amount while recording in the database that the device has been paid, and preferably receive the device back and reset the device so it can be reused. While it is assumed the device itself has no cash value, a cash value or deposit can also be associated with the device. Such devices can also be manufactured cheap enough such that they can be disposable.

[20] Thus, note that the portable device (although the invention is not limited to a portable device) is a viewer, not an actual gambling device that accepts wagers.

[21] Figure 1 is a block diagram illustrating hardware used to implement the present invention, according to an embodiment of the present invention.

[22] A source computer 100 (or host) is typically operated or owned by a casino or other gaming entity. The source computer 100 generates the gaming results using a random number generator, typically in the same way a typical slot machine generates

results as known in the art. The results are not displayed (although they can be) but are stored in a results storage 102. The results storage 102 can store results for a plurality of sets of gambling results (each set would be used for a different viewing device or other medium). Each set can also be associated with a unique identification number associated with each viewer. Each set of results is copied to a separate results storage 108 which is part of the viewer.

[23] A viewer 104 stores the pre-stored game results in the results storage 108. While preferably the results storage 108 is a nonvolatile storage integrally connected to the viewer 104, the results storage can also be a separately connectable memory (such as an EPROM) which contains pre-stored game results (or can be any other storage method). The viewer also contains an identification 106 identifying the particular viewer and allowing the respective set of results for this viewer to be matched with the respective set on the host result storage 102.

[24] The viewer 104 also comprises a CPU 110 which controls the processing and operations of the viewer. A ROM 112 (or other kind of storage) stores the programming to display the game results, which can include graphics, viewing logic, etc. A RAM 114 stores any temporary data needed for the viewer, such as screen memory, etc. An input device 116 allows a user to communicate with the viewer. For example, a button can be pressed when the user wants to spin the reels to view the next game. An optional "final value button" can also be pressed which skips all of the viewing of the games and immediately outputs the final value after the results of all of the games. An output device 118 can comprise for example an LCD and displays the game. Preferably, if the game is

a slot machine game, animation and sound can also be used to imitate the experience of real live slot machines to make the experience more enjoyable for users.

[25] Figure 2 is a flowchart illustrating a method of generating and viewing game results, according to an embodiment of the present invention. Operations 200-204 of Figure 1 refer to operations taking place on the host computer, while operations 206-214 refer to operations taking place on the viewer.

[26] The method starts with operation 200, which receives an initial purchase amount. This is typically the initial credits used. For example, a user may wish to purchase a viewer with \$100 worth of wagers on it. Thus 100 spins of a slot machine can be generated. However, in the alternative, additional random results can be generated until the total value of the spins is either zero or greater than or equal to a predetermined cap. For example, a viewer can be purchased for \$100 with enough spins to view such that either the viewer will eventually lose all of its value, or it will reach a value greater than a predetermined threshold (i.e. \$200). The predetermined threshold can be considered a win cap. Using a win cap is preferably so that the user is not limited to only a limited number of spins. The player can also choose which slot game(s) the player wishes to view.

[27] From operation 200, the method proceeds to operation 202 which generates and stores a random result in the host storage. Each set of game results (for each different device) should typically be generated and stored separately. The game result is typically determined in a manner similar to a typical slot machine. A random number generator is used to determine reel positions. It may be desirable to copy the algorithms used in

popular current slot machines so their play can be replicated on the viewer. Any kind of slot machine can be replicated, such as 3 reel, 5 reel, etc.

[28] From operation 202 the method proceeds to operation 203, which checks to see if the method is done generating random results. This is done by adjusting the value of the current credits (starting with an initial credit amount) depending on the results of the previous game. For example, if each spin costs \$1, and the previous “spin” was a loss, then the total value is decremented by one. If the previous spin generated a win of \$10, then the total value is incremented by 9. If the value of the viewer is \$0, then the method is typically done generating random results. If a win cap is being used, and the value of the viewer is greater than the win cap, then the method is typically done generating random results. If a win cap is not used but a limited number of spins is to be generated instead (i.e. 100 spins) then a counter is used to determine if the method is done generating results.

[29] If the check in operation 203 determines that the method is done generating random results, then the method proceeds to operation 204 which copies stored trials from the host storage into a viewer storage of a viewer. This can be done preferably by linking the host storage with the viewer storage by a physical connection.

[30] Upon completion of operation 204, the viewer now has the entire history of the random game results and the viewer (or just the set of results represented therein) has a predetermined value. The user (or purchaser) of the viewer is now free to take this viewer wherever he or she pleases, such as on an airplane, a restaurant, or even back home.

[31] In the alternative, instead of copying the results to the viewer when the results are fully generated, the results can be copied iteratively as soon as each result is generated.

[32] When the user wishes to utilize the viewer, the method then picks up at operation 206 in which the viewer waits for and receives a signal from an input device to view a new game (a game would be considered a spin). The signal from the input device could simply comprise a button on the viewer being pressed.

[33] From operation 206, the method proceeds (once the input signal is received) to operation 208 which retrieves the next game result from the local viewer storage. A counter is typically maintained (preferably in a nonvolatile storage) so that the viewer knows which game result is next to be displayed. Game results should be displayed in sequence, but an individual game result should not be re-displayed (although of course two different game results could have an identical outcome in which they should be displayed separately).

[34] From operation 208, the method then proceeds to operation 210 which displays the next game result retrieved in operation 206. The game result is displayed using an output device such as an LCD. Animation and sound, as known in the art, can be used to enhance the player's experience. Preferably, a current value of the viewer (i.e. the sum off the wins and losses) is displayed as well.

[35] From operation 210, the method proceeds to operation 212, which checks if there are more results left. This can be done by having a field in the viewer storage indicating how many game results are contained in the storage. When the counter reaches this

amount, then there are no more results left to view. Alternatively, the last game result in the sequence can comprise a special value indicating no more results are remaining.

[36] If the check in operation 210 determines that there are more results left to be displayed, then the method returns to operation 206 which allows the user to continue viewing.

[37] If the check in operation 210 determines that there are no more results left to be displayed, then the method proceeds to operation 214 which displays the final value of the viewer. If this value is zero, then the viewer has no value to redeem (although it is possible a deposit might be required for the viewer itself). If the value is not zero, then the player should redeem the viewer for this amount, typically where he purchased the viewer originally. Note that the player is typically not permitted to “keep his winnings” if there are more spins to view. The player should typically play every spin available until there are none left before he can redeem any value left. This would avoid any discretion on the player’s part so that the final result of the viewer equals that stored in the source computer. Preferably, there should be no playing discretion on the player’s part so that the final credit result on the player should match what is stored at the host which would be paid to the player.

[38] Figure 3 is an example of a portable viewer, according to an embodiment of the present invention.

[39] A portable viewer 300 is used to view the pre-stored game results. An output device 302 displays the game progress and outcome. Also displayed is the current value of the viewer (i.e. the original credits minus the sum of the previous results). An optional

paytable 304 is printed on the device which displays the payouts (this could be displayed using a dynamic output device as well). A spin button 306 is used so that the user can spin the reels of the slot machine and watch the results.

[40] A communication unit 308 allows the viewer 300 to communicate with other devices such as a source computer. This can allow the source computer to transmit a game result set to the viewer which is stored in a results storage. This can also allow the viewer 300 to talk to the source computer to transmit an identification number or any other information, although preferably a barcode on the viewer 300 itself is how the source computer will identify the particular viewer 300. The communication unit 308 can connect to the CPU in the viewer or a interface unit (which may contain communication instructions) which connects to the CPU, allowing the viewer to communicate with outside devices.

[41] Not pictured is an optional speaker which can be used to generate sound effects. Also not pictured is a power supply such as a battery or solar panel. Also not pictured is an ID code, such as an identification number and/or a barcode for easy identification of the particular viewer. Also not pictured is an optional final result button, which when pressed, immediately processes each of the pre-stored games remaining in sequence to immediately display the final value of the viewer. Such a button can be used if the player no longer wishes to play and wants to see the final value of the device.

[42] In addition to a slot game, the methods described herein can also be applied to any other gambling games such as keno, blackjack, video poker, etc. However, with regard to games like blackjack or video poker where there are player decisions to be made in the

game, it is noted that since the outcomes are all pre-stored player decisions are typically not allowed. Thus, the host computer should typically generate hands along with the way those hands are played. Typically, optimal strategy can be used to decide how the hands should be played. Further, the player using the viewer also typically would not be able to adjust his bet. Thus, flat betting can be utilized, or else some type of betting progression wherein when the previous hand is won the next bet increases (or decreases) in a predetermined manner. In this manner, the player gets excitement of a varying bet size. For all of these reasons, games like slots are ideal for this system which typically requires a flat bet and no player decisions or discretion.

[43] Keno could also be implemented using this system. When the games are generated by the host, a same set of numbers can be used for each keno drawing (the same set either chosen randomly or by the player when the player first purchases the portable gaming device). Alternatively, a different set of desired numbers (“spots”) can be chosen by the computer for each game. Thus, when a user is viewing the keno game the user will view the desired keno numbers and then the “randomly” drawn numbers will appear (preferably one by one using a time delay). Depending on how many randomly drawn numbers match the desired keno numbers, the player may win an amount of money. Of course, the numbers are not really randomly drawn at this point in time, but are pre-stored (and were randomly drawn by the host). Once all the random numbers are displayed the round is over and a new game can begin.

[44] Bingo could also be implemented using this system. A random bingo card can be generated by the host along with random bingo spots called (i.e. “O32.”) A player can win if he or she gets “bingo” before a predetermined number of spins (could be fixed or a

random number chosen by the host), upon which an imaginary player can “yell” “bingo” and the current game would be over. Of course a plurality of games can be generated in a set. In this way, a player who likes to play bingo can view bingo for real money while not in a bingo hall. The player would not really discern a difference between viewing the game and actually playing it if it were being called live.

[45] In a further embodiment of the present invention, a commonly available Personal Digital Assistant (PDA) can be used as the portable viewer. The PDA can download software needed to display the generated game results. The PDA can also download the actual game results themselves after a purchase (or if provided for free). A unique identification code should typically be provided when a set of game results is downloaded to a PDA so that the game results can be identified by the host computer.

[46] Figure 4 is a block diagram illustrating use of a PDA as a viewer, according to an embodiment of the present invention.

[47] A source computer 400 is comparable to the source computer from Figure 1. The results storage 402 also serves the same purpose as the results storage from Figure 1. An external interface unit 404 is used to communicate with a PDA 406. The communication can be done by any standard communication protocol, such as USB.

[48] If the PDA does not contain the software required to display the game results, then the PDA can download the software. The software can actually comprise multiple components, each component for a different game. A user may only be required to download components he or she desires. In addition to the software, an actual set of game results is downloaded as well to be read by the software and displayed to the user.

Since PDA's are now commonly available in color with loud speakers, a PDA is ideal to use as a viewer for the game results.

[49] In yet a further embodiment of the present invention, a PDA (or type of viewer described above) can be used to download game results over a computer communications network such as the Internet. In this way, a player can view game results without having to physically be present in a location to purchase or receive a set of game results.

[50] Figure 5 is a block diagram illustrating how game results (and viewing software) can be downloaded over a computer communications network, according to an embodiment of the present invention.

[51] A source computer 500 is comparable to the source computer from Figure 1. The results storage 502 also serves the same purpose as the results storage from Figure 1. The source computer 500 transmits a set (or package) of game results over a computer communications network 504 (such as the Internet) to a home computer 506. The home computer 506 downloads the set of game results. If the home computer 506 does not contain the proper viewing software for the PDA 508, then the home computer 506 can also request and download viewing software written particularly for the PDA 508. The PDA 508 then in turn can download the software and game results from the home computer 506. Alternatively, if the PDA is capable of connecting directly to the computer communications network 504, then the home computer 506 is not even necessary. If the user wishes to view the results for real money, then the user should typically pay the provider of the game results.

[52] In this manner, a home user can equip his or her PDA 508 to view slot and other wagering games, which have predetermined results stored on the source computer 500. While online casinos currently exist which may allow a PDA to play a gambling game in real time with a wireless Internet connection, using a PDA as described herein allows a PDA owner to view gambling games without having to have a live Internet connection. This can be desirable for people who take a train or bus and would like some form of entertainment.

[53] When the user of the PDA is finished viewing the set of gaming results (which are generated as described above), if the final value is greater than zero, the user can transmit an identification number of the set of gaming results (either directly from the PDA or from his or her computer) in order to be reimbursed for the dollar amount by the party providing the gaming data.

[54] In a further embodiment, a set of stored results can be stored on a computer readable storage, such as a CD-ROM. The CD-ROM can also store the software required to view the results. Thus, a patron can purchase a CD-ROM for a dollar amount, give an optional win cap (or just request a predetermined number of plays), and receive a CD-ROM which may have a dollar value based on the results. The patron may also choose which slot games he or she wishes to view. There should preferably be no playing discretion once the player has possession of the CD-ROM, so that the final value of the CD-ROM should match the value stored on the host computer. Sometimes slot games comprise a bonus round with player decisions (such as picking random items on screen), in this case the computer should automatically pick the random items for the player (these picks are pre-stored like the game results themselves.) In the alternative, in a less

preferred embodiment player discretion and decisions can be allowed, which may affect the final value of the CD-ROM.

[55] Further, multiple types of slot machines can be used if the slot machines have the same payout structure and receive the same inputs. For example, many different slot machines exist, but they are basically all variants of the same basic machine but for different symbols being used. If different machines can read the same inputs and produce identical payouts, then the player viewing the set of results is free to choose different slot machines to play, as the final value of the set of results would not change.

[56] Figure 6 is a block diagram illustrating how game results and software can be stored on a storage medium, according to an embodiment of the present invention.

[57] A source computer 600 is comparable to the source computer from Figure 1. The results storage 602 also serves the same purpose as the results storage from Figure 1. The results storage is copied to a computer readable storage 604 (such as a CD-ROM). A user can then play the storage 604 in a home computer 606. The storage 604 can contain the data as well as the software required for viewing.

[58] Using a home computer and a CD-ROM can provide an enjoyable multimedia experience, as slot machines can be emulated to closely resemble their real live counterparts in the casinos. The CD-ROM preferably has a unique identification associated with it and preferably printed on the surface for easy identification if the patron wants to cash in or inquire about the particular result set. Alternatively, the identification number can not be printed on the CD-ROM but written on the CD-ROM itself for greater security. For even greater security, the identification number can be encrypted. When

finished viewing all of the results, the patron can receive his or her awards based on the identification.

[59] A CD-ROM (or any other storage as described herein) can also be used to store game results with non-monetary prizes, such as a free room, a free show ticket, etc. A casino may wish to mail (or provide at check in or check out) such a CD-ROM so that a player can enjoy viewing slots even after he or she has left the casino hotel and still win prizes. With this method, there is no worry that a player can hack into the system and rig the game to provide himself with awards, nor does the player need to be connected to the Internet.

[60] The set of gaming results can be generated and stored in numerous ways. For a slot game with a non-weighted reel, a simple random number can be used to determine which symbol on a reel the machine stops at. This can be done three times, one time for each reel. Table I represent a sample set of gaming result data for 5 spins.

Table I

Spin #	Symbol1	Symbol2	Symbol3
1	7	blank	cherry
2	blank	blank	blank
3	blank	bar	7
4	blank	blank	blank
5	bar	bar	bar

[61] In addition to the data in Table I, a payout amount for each spin result can also be included, or this can be calculated by the viewer after each spin from a payable.

Alternatively, instead of storing the result for each reel, one number can be stored for each spin which represents a combination of 3 symbols. While the result data can be encrypted or otherwise maintained securely, this is typically not necessary, as the original data stored on the source computer (which should be kept secure) is used to verify any winnings.

[62] Of course, more complicated methods to generate spin results can be used in accordance with what is known in the prior art, such as weighted reels, etc. A viewer can be designed to closely emulate slot games current appearing in casinos.

[63] A telephone system can also be used to verify winnings from such a viewing system. A user can call a special number and indicate his or her game result set by punching or speaking the ID code. The user can then be presented with the value of the game result set. If the value is greater than zero, the user may request that the money be sent to his or her address or paid in another manner. Alternatively, the user may be required to collect the dollar amount in person. Typically, the entity providing the set of results (i.e. a casino) should be accountable for paying winnings to the viewer, whether monetary or non-monetary. Further, the Internet can be used to request winnings, where the identification number of the result set (this may be printed on the CD-ROM or viewer itself) can be transmitted to the accounting party, which can then pay the amount electronically or physically.

[64] In yet another embodiment of the present invention, such a portable viewing device can be provided to a user free of charge as a promotion or incentive. For example, a casino may wish to mail such a viewer (or a CD-ROM as described above) to a selected patron, or a casino may provide such a viewing device to a patron at check-in. Of course, the casino can choose the value of each device (i.e. how many spins and how much each spin is worth, for example 50 spins at .25 each).

[65] Further, such a viewing device may award non-monetary prizes. For example, a slot machine (or other game) can be used to award free nights, free meals, show tickets, etc. Since the results are pre-stored, there is no concern for a player hacking into the device to fix the results.

[66] It is also noted that any and/or all of the above embodiments, configurations, variations of the present invention described above can mixed and matched and used in any combination with one another. Any claim herein can be combined with any others (unless the results are nonsensical). Further, any mathematical formula given above also includes its mathematical equivalents, and also variations thereof such as multiplying any of the individual terms of a formula by a constant(s) or other variable.

[67] Moreover, any description of a component or embodiment herein also includes hardware, software, and configurations which already exist in the prior art and may be necessary to the operation of such component(s) or embodiment(s).

[68] The many features and advantages of the invention are apparent from the detailed specification and, thus, it is intended by the appended claims to cover all such features and advantages of the invention that fall within the true spirit and scope

of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation illustrated and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.